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ABSTRACT

In 1985-86, Project BITEC provided bilingual instruction and supportive services to 379 limited English proficient (LEP) students from Italian, Chinese, Vietnamese, and Latin American backgrounds at New Utrecht High School (Brooklyn, New York). The project aimed at enabling its target population to master the English language as soon as possible, continue their education in content areas through bilingual courses, and gain vocational skills. BITEC offered courses in English as a second language (ESL); bilingual instruction in mathematics, science, and social studies; and courses in industrial arts, secretarial studies, and computer technical studies. This evaluation found that: (1) significant gains were made in English reading achievement; (2) students achieved a 70 percent passing rate in native language arts courses; (3) overall, the percentage of program students passing teacher-made examinations in mathematics, science, social studies, and secretarial courses in the spring semester was equal to or greater than that of mainstream students; (4) program students surpassed a 70 percent passing rate in computer programming, typing/steno/word processing, and electronics, architectural drafting, and advanced building trades; (5) program students had a higher attendance rate than mainstream students; and (6) the dropout rate of program students was not significantly lower than that of mainstream students. (PS)

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PROJECT BITEC

1985-1986

OEA Evaluation Report

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O.E.A. Evaluation Section Report

Robert Tobias, Administrator of Evaluation
Judith S. Torres, Senior Manager

Grant Number: G00-830-2901

PROJECT BITEC

1985-1986

Principal:
Allen Leibowitz

Project Coordinator:
Aldo Iemma

Prepared by the
O.E.A. Bilingual Education Evaluation Unit

Armando Cotayo, Manager
José J. Villegas, Evaluation/Planning Specialist
Shelley M. Fischer, Evaluation/Planning Specialist
Margaret H. Scorza, Editorial/Production Coordinator
Ana L. Martinez, Evaluation Consultant

New York City Public Schools
Office of Educational Assessment
Richard Guttenberg, Director

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A SUMMARY OF THE REPORT

Project BITEC completed its final year of a three-year funding cycle. The project provided courses in English as a second language (E.S.L.), native language arts (in Spanish, Italian, Chinese, and Vietnamese), and bilingual instruction in mathematics, science, and social studies. In addition, courses were offered in three vocational areas: industrial arts, secretarial studies, and computer technology. The project provided instruction and support services to approximately 379 limited English proficient (LEP) students from Latin America (37 percent), China and Vietnam (48 percent), and Italy (15 percent).

The major goal of Project BITEC was to increase the English proficiency of its students, while continuing their education in content areas through bilingual courses. Until this year, Chinese and Vietnamese language and content-area instruction were provided by non-licensed consultants with the approval of the Board of Education. This year, after a major recruiting effort, a licensed Chinese teacher joined the program.

Title VII provided funds for the administrative and support-services staff, with the exception of the recently appointed bilingual counselor, who was financed by Chapter I funds. All the project's staff members attended university courses intended to enhance their ability to contribute to the program; they also frequently attended school meetings, workshops, and lectures on pedagogic strategies and intercultural issues.

The program made parental involvement one of its major non-curricular objectives because parents in some of BITEC's target groups reportedly did not view education as necessary for economic survival and upward mobility. In this third year of the project's operation, efforts by staff members in this regard led to a substantial increase in parental involvement.

Project BITEC's curriculum specialists achieved their goal of developing guides for computer and secretarial courses in all of the project's target languages and were in the process of completing similarly multilingual curricula in industrial arts. As stated in BITEC's goals, these materials were made available to other high schools and educational institutions.

Project BITEC promoted the students' pride in their native cultures and their understanding of their fellow students' cultures through ethnic celebrations, field trips, an inter-ethnic magazine, and parties.

Program objectives were assessed in the areas of English-language development (Stanford Achievement Test); growth in the native language (teacher-developed examinations in Chinese, Spanish, Italian, and Vietnamese); mathematics, science, social studies, industrial arts, secretarial studies, and technology/computers (teacher-developed examinations); and

attendance and dropout rates (school and program records). Quantitative analysis of student achievement data indicates that:

-- Program students made significant gains in English reading achievement, thus meeting the proposed objective.

-- Students in all four language groups surpassed the program objective of a 70 percent passing rate in native langauge arts courses.

-- Overall, the percentage of program students passing teacher-made examinations in mathematics, science, social studies, and secretarial courses in the spring semester was equal to or greater than that of mainstream students, thus meeting the proposed objective in those areas. The objective was not achieved by students in industrial arts courses. Data were not provided to assess the objective in the fall.

-- The objective of a 70 percent passing rate in computer programming, typing/steno/word processing, and electronics, architectural drafting, and advanced building trades was surpassed in both fall and spring. However, no students were reported as taking the apprentice examination given by the Electricians', Carpenters', Tinsmiths', and Plumbers' unions.

-- The attendance rate of program students was significantly higher than that of mainstream students, thus meeting the objective.

-- The dropout rate of program students was not significantly lower than that of mainstream students. The objective was not met in this area.

Since Project BITEC's funding cycle concludes this year, it is recommended that the school administration and project staff make every effort to seek funds to reinstitute such a project in the future.

ACKNOWLEDGEMENTS

The production of this report, as of all Office of Educational Assessment/Bilingual Education Evaluation Unit reports, is the result of a cooperative effort of regular staff and consultants. In addition to those whose names appear on the cover, Eulalia Cabrera has interpreted findings and has integrated material into reports. Arthur Lopatin has edited the reports following the O.E.A. style guide and has written report summaries. Finally, Joseph Rivera, Marcia Gilbert, Bruce Roach, Gladys Rosa, and Martin Zurla have worked intensively as word processors to produce and correct reports. Without their able and faithful participation, the unit could not have handled such a large volume of work and still produced quality evaluation reports.

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PROJECT BITEC
NEW UTRECHT HIGH SCHOOL

Location:	1601 80th Street Brooklyn, New York 11214
Year of Operation:	1985-86, Final year of three-year funding cycle
Target Languages:	Italian, Chinese, Vietnamese, Spanish
Number of Participants:	379 Students
Principal:	Michael Russo
Project Coordinator:	Aldo Iemma

I. OVERVIEW

In 1985-86, Project BITEC provided bilingual instruction and supportive services to 379 limited English proficient (LEP) students from Italian, Chinese, Vietnamese, and Latin American backgrounds. It was located at New Utrecht High School, in a residential area of Brooklyn.

The school has a long history of bilingual education, having offered the first high school bilingual program for Italian migrants in the United States (Project Impact). Project BITEC expanded New Utrecht's bilingual program to include Chinese-, Vietnamese-, and Spanish-speaking students. According to the principal, New Utrecht's experience and success in the area of bilingual education has led school systems outside of New York State to send representatives to the school in search of information and counseling on bilingual educational programs.

The central aim of Project BITEC was to enable its target population to master the English language as soon as possible, while continuing their education in content areas through bilingual courses. The project also

attempted to provide vocational training that would enhance the students' ability to compete in the job market.

In order to meet these goals, BITEC offered courses in English as a second language (E.S.L.), bilingual instruction in mathematics, science, and social studies, and courses in three vocational areas: industrial arts, secretarial studies, and computer/technical studies.

The Title VII project staff consisted of a coordinator, a curriculum developer, a resource teacher, two consultants, two paraprofessionals, and one bilingual secretary. Project students were also served by a bilingual counselor funded by Chapter I. The project coordinator and the bilingual secretary shared a small office, which also served as a meeting place for staff members, students, and teachers. Most administrative and curriculum-related tasks took place in the project's resource room, which was located next to the coordinator's office. The resource room was less crowded than in previous years, because it was no longer used as a classroom for the program's Chinese group, which had been alloted a regular classroom.

The project coordinator was supervised by the assistant principal (A.P.) for foreign languages, a former Title VII project coordinator. They communicated well, had a genuinely collaborative relationship and had similar views on project goals and performance. The project coordinator also had excellent rapport with the school's new principal, who gave the project his full support.

COMMUNITY AND SCHOOL SETTING

New Utrecht is located in the Bensonhurst section of Brooklyn, a residential, working class area containing one- and two-family houses and several commercial strips. The houses are well preserved and most have

well-kept yards and gardens. The immediate neighborhood has a large concentration of Italian-Americans, perhaps one of the largest in the U.S. However, because of the school's convenient location, its reputation for safety, and its success in integrating students from different ethnic groups, it attracts a large number of Asian and Latin American students from the Sunset Park area, which recently was given the option of sending students out of district.

In the 1985-86 academic year, New Utrecht had a student body totaling 2,991. Of these, 55 percent were white, 21 percent Hispanic, 15 percent black, and 8 percent Asian. Of the total school register, 22 percent were students of low economic status as evidenced by their eligibility for free lunch. Twenty-nine percent of all New Utrecht students read at or above grade level.

The school building dates from 1925 and has a satisfactory external appearance. However, the inside has peeling paint and broken windows. According to the school principal, New Utrecht will be fully refurbished during the coming year. The school has an indoor swimming pool and an outdoor baseball field that can be used by all students.

II. STUDENT CHARACTERISTICS

Project BITEC served 379 students from four different cultural backgrounds: Hispanic (37 percent), Chinese (36 percent), Italian (15 percent), and Vietnamese (12 percent). The criteria for selecting students for the program were a score below the twenty-first percentile on the English version of the Language Assessment Battery (LAB) and interviews with students and parents. A small number of students who scored above the twenty-first percentile on the LAB were accepted in the project because they had encountered difficulties in content-area courses. Prominent in this group were natives of Hong Kong who, although they could read English, were deficient in aural and verbal ability.

The number of Latin American and Asian immigrants at New Utrecht had grown more rapidly than the number of Italian immigrants. Most of the Chinese students were the children of political refugees who had settled in the outskirts of Bensonhurst. The Chinese students who came from Taiwan had a better educational background that those from the mainland. Students from both mainland China and Vietnam experienced greater phonetic difficulties, because they lacked prior exposure to English. The project director said that, regardless of their home country, all the project's Asian students were extremely achievement-oriented.

The two Latin American countries from which Hispanics migrated were the Dominican Republic and Puerto Rico. According to members of the project's staff, New Utrecht's Dominican students generally had little formal education, tended to come from rural areas, and had greater difficulty in adjusting to the demands of school than did Puerto Rican students.

A very small group of students were illiterate in both English and their native language. The principal estimated that approximately ten students were in this group during the spring semester. They were said to present special problems of adjustment and to be more likely to drop out of school than the other project students.

Fifty-three percent of the students were overage for their grade placement; ninth and tenth grades tended to have higher proportions of overage students.

Tables 1 and 2 present the BITEC students by country of birth, and age and grade, respectively.

TABLE 1

Number and Percent of Program Students
by Language and Country of Birth

Language	Country of Birth	Number	Percent
Spanish	Puerto Rico	41	11
	Central and South America	41	11
	United States	33	9
	Dominican Republic	21	6
	Spain	2	*
Chinese/ Cantonese	China (P.R.C.)	25	7
	Hong Kong	19	5
	Vietnam	6	2
	Other Asian	1	*
	United States	1	*
Chinese/ Mandarin	China (P.R.C.)	54	15
	Vietnam	18	5
	Taiwan	4	1
	Hong Kong	2	*
Italian	Italy	48	13
	United States	6	2
	Other European	2	*
Vietnamese	Vietnam	45	12
French	Cambodia	1	*
TOTAL		370**	100.0

*Less than one percent.
**Data were missing for nine program students.

- Thirty-seven percent of the students were native Spanish speakers.
- Thirty-six percent were Chinese-speaking students.

TABLE 2

Number of Program Students by Age and Grade

Age	Grade 9	Grade 10	Grade 11	Grade 12	Total
13	2	0	0	0	2
14	7	0	0	0	7
15	16	13	1	0	30
16	18	40	15	4	77
17	10	45	37	12	104
18	4	16	29	25	74
19	0	4	11	29	44
20	0	6	5	7	18
21	0	0	5	3	8
TOTAL	57	124	103	80	364*
Overage Students					
Number	32	71	50	39	192
Percent	56	57	48	49	53

Note. Shaded boxes indicate expected age range for grade.

*Data were missing for 15 students.

- Fifty-three percent of the program students were overage for their grade placement.
- The highest percentage of overage students was in grade ten (57 percent).

III. FINDINGS

The evaluation findings for the 1985-86 academic year include objectives measurable by standardized test results, and those assessed on the basis of examination of program records, site visits, classroom observations, and interviews with school personnel. Below are both the general program objectives and those specifically formulated for the present year, as proposed to and accepted by the Office of Bilingual Education and Minority Languages Affairs, U.S. Department of Education.

ENGLISH AS A SECOND LANGUAGE

-- As a result of participating in the program, students will make significant gains in English language arts as measured by the Stanford Achievement Test.

Five terms of E.S.L. instruction were offered. These classes, which lasted one period a day, sought to develop students' listening, speaking, reading, and writing abilities in English. In addition, three levels of speech-lab classes were available in both fall and spring semesters. These labs sought to develop fluency, accent, intonation, and speech patterns.

The aim for a beginning E.S.L. class observed by a member of the evaluation team was to develop the students' ability to use common household words. Nearly all students (mostly Asians with a smaller number of Italians and Latin Americans) were attentive and curious. The teacher frequently used mimicry to explain the meaning of words.

In an interview, the teacher said that because many of her students had little or no previous contact with modernity, traditional ways of teaching had to be supplemented by mimicry and "hands-on" training. For example, in addition to teaching household-related vocabulary, she had

taken the students to visit the school kitchen, where they could associate words with concrete objects.

Student Achievement in E.S.L.

The assessment instrument used for measuring achievement in this area was the Stanford Achievement Test (SAT) Form B, Level 3. The SAT was administered in the fall and spring. Because the program tests out-of-level, the analysis was based on raw score gains rather than on standard score gains. The results are presented in Table 3. Of the 371 students in the program, 331 were there both semesters. Pretest data were available for 280 students (85 percent), and posttest data were available for 141 students (43 percent); complete data on both tests were available for 125 program students (38 percent).

Examination of Table 3 reveals that the students made significant gains ($p>.05$) on the SAT, thus meeting the stated objective.

TABLE 3

Results of the Stanford Achievement Test (SAT), Level 3

Number of Students	Pretest		Posttest		Gain		Proportion Making Gains
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
125	93.0	23.4	101.6	26.1	8.6*	13.5	77

*Statistically significant at the .05 level.

- Program students tested made significant gains, thus meeting the program objective.

NATIVE LANGUAGE ARTS

-- Seventy-five percent of project students enrolled in Vietnamese, Chinese, Spanish, or Italian language classes will pass teacher-made tests in these subjects.

According to the project proposal, the aims of native language instruction were to foster pride in the students' culture and to increase their chances for success in the business and/or professional worlds where being bilingual is increasingly valuable.

The number of native language arts (N.L.A.) courses offered during the year under review appeared to be partly determined by the availability of teachers and by the students' ethnic distribution. Three Spanish classes, two Italian classes, one Chinese class, and one Vietnamese class were offered in the fall. Five Spanish-language classes, and one class in each of the other languages were offered in the spring.

The Chinese and Vietnamese classes consisted of composition and native language arts development. A recently hired Chinese teacher enabled Chinese-speaking students to attend regularly-scheduled classes, rather than the informal sessions that had previously been held in the resource room. A Vietnamese language arts class was taught by a non-licensed consultant with the approval of the Board of Education. Italian and Spanish N.L.A. classes provided the student with a survey of literature and advanced grammar.

Native language arts classes provided instruction in native culture which was augmented by field trips. During a classroom visit by the evaluation team, Spanish-speaking students were shown a documentary film on Argentina in preparation for their forthcoming field trip to see the Argentinian film La Historia Oficial.

A member of the evaluation team also observed an Italian N.L.A. class. Attendance was high, over 80 percent of the total enrollment. The class was conducted mainly in Italian, although the teacher occasionally used English when establishing discipline. The objective of the lesson was to read, understand, and analyze Italian prose writings from the book L'Italia Racconta, by A. Mollica and Angela Convertini. Readings by the students were followed by questions from the teacher.

The classroom atmosphere was relaxed yet work-oriented. The students' behavior was very orderly and disciplined. Most students were attentive, seemed interested in the subject matter, and paid attention throughout the entire period.

Student Achievement in Native Language Arts

In accordance with the proposed objective, passing rates were examined for students enrolled in Chinese, Vietnamese, Spanish, and Italian language courses. Table 4 presents students' passing rates for each semester by language group. The project objective of a 75 percent passing rate was achieved in all areas: overall, 88 percent of the students passed teacher-made tests in native language arts courses.

TABLE 4

Passing Rates in Native Language Arts Courses

Language Course	FALL		SPRING		TOTAL
	Number of Students	Percent Passing	Number of Students	Percent Passing	Overall Passing Rate
Vietnamese	30	83.3	41	92.7	88.7
Chinese	91	96.7	101	90.1	93.2
Spanish	116	83.6	102	87.3	85.3
Italian	47	87.2	46	73.9	80.6
TOTAL		88.4		86.9	87.6

- Overall, the objective was achieved both semesters in all language courses.
- Chinese-speaking students achieved the highest overall passing rates in native language arts classes (93.2 percent).

CONTENT-AREA SUBJECTS

-- As a result of participating in the program, the percentage of students enrolled in content-area courses offered bilingually passing New York Regents examinations and/or teacher-proposed tests will be equal statistically to the percentage of mainstream students passing in mathematics, science, social studies, industrial arts, secretarial studies, and technology/computer.

Specific objectives for the third year:

-- Students in the computer strand will take a course in programming in MICROSOFT BASIC computer language. As a result of this course, 70 percent of the students will be able to write an eight-page program and input information into a data base at a rate of 50 words per minute.

-- Students in the secretarial strand will be given a course in advanced typing, stenography, and word processing. As a result of these courses, 70 percent of the students will be able to type at a rate of 60 words per minute, take shorthand at a rate of 100 words per minute and transcribe a two-page letter for word processing in 10 minutes.

-- Students in the industrial strand will be given courses in electronics, architectural drafting, and advanced building trades. As a result of these courses, 70 percent of the students will have acquired sufficient hands-on entry level skills to pass the examination for apprentice given by the following trade unions: Electricians', Carpenters', Tinsmiths', and Plumbers'.

Appendix A lists the bilingual content-area and vocational courses offered by the program during the fall and spring semesters.

The project was able to fill most of its instructional needs in these classes by recruiting content-area teachers who speak Italian or Spanish. In addition to offering Chinese-language classes, the Chinese teacher acted as a translator for the Chinese students in mainstream classes.

A bilingual global history class on the evolution of the British parliament was observed by a member of the evaluation team. Of the 34 students enrolled, 27 students were present; 90 percent were Chinese speakers and 10 percent were Korean or Vietnamese speakers. The students were attentive and orderly. Although the class was conducted largely in

English, the teacher translated important concepts into Chinese and wrote them on the blackboard. Korean and Vietnamese students were encouraged to provide translations into their own languages. All students were encouraged to practice the correct pronunciation of key terms, such as "parliament," and "divine right."

Most of the project's bilingual content-area classes were taught by licensed teachers who had an excellent command of Italian or Spanish. An English-Spanish biology II class that was observed by a member of the evaluation team provides one example of such classes. Eighty percent of the class was conducted in English, with the teacher using Spanish to praise students, to explain difficult concepts and new terms, and to verify that everyone understood new material. Although students generally used English to ask questions, they sometimes switched to Spanish for complicated questions. The two Italian-speaking students in the class were assisted by a paraprofessional. They appeared attentive and were described by the teacher as excellent students.

The topics of the lesson was female physiology and the menstrual cycle. Students frequently asked questions, volunteered answers, and provided explanations on the blackboard. Despite considerable noise from outside the classroom and the disruption caused by two workers who were fixing a locker inside the classroom, the teacher managed to keep the students' attention throughout.

The program also offered instruction in three vocational areas: industrial arts, secretarial studies, and computer technology. A member of the evaluation team observed a computer class. The subject-area teacher spoke in English and the Chinese language arts teacher provided simultaneous

translation into Chinese. Attendance was 100 percent. About half of the class members were Chinese speakers and half were mainstream students. In interviews, bilingual students said they had no problem understanding the Chinese teacher's translations. They appeared interested in the subject and enthusiastic about its marketability. The class ran smoothly, and students seemed to have an excellent command of their Tandy 1000 computers.

Student Achievement in Content-Area Subjects

In accordance with the proposed objective, the passing rates of program students were compared with those of mainstream students in similar content-area courses. Mainstream students' data were available for the spring semester only. Statistical significance of the difference between program and mainstream passing rates was determined through a *z*-test for the significance of the difference between two proportions.* This procedure tests whether the difference in the rates for two independent groups is greater than can be expected by chance variation.

Examination of Table 5 reveals that program students achieved significantly higher ($p>.05$) passing rates than mainstream students in mathematics, science, and social studies courses in the spring, thus achieving the objective, and the passing rates of program students in the fall were even higher than in the spring. Program students did not meet the objective in industrial arts courses.

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*Bruning, J.L. and Kintz, B.L.: Computational Handbook of Statistics; Scott, Foresman and Company, 1968.

TABLE 5

Passing Rates for Program and Mainstream Students in Content-Area Courses

Content Area	Bilingual Program: Number of Students	Bilingual Program: Percent Passing	Mainstream Classes: Percent Passing	Mainstream Classes: z-test Value
		FALL		
Mathematics	309	82.2	Data not provided	
Science	209	81.3	Data not provided	
Social Studies	312	85.3	Data not provided	
Industrial Strand	25	95.0	Data not provided	
Secretarial Strand	82	91.5	Data not provided	
Computer/Technical[a]	6	100.0	Data not provided	
		SPRING		
Mathematics	263	80.3	65.9	4.93*
Science	216	80.1	65.5	4.51*
Social Studies	249	81.5	73.0	3.02*
Industrial Strand	31	74.2	88.5	-2.49*
Secretarial Strand	36	86.1	87.0	-0.16
Computer/Technical[a]	27	85.2	Data not provided	

[a] Includes computer programming and computer literacy.

*Statistically significant at the .05 level.

- The objective was achieved in math, science, social studies, and secretarial courses in the spring.

In accordance with the specific third-year objectives, students' passing rates in special interest courses are presented in Table 6. The overall passing rate was 90.8 percent. The 70 percent passing criterion was surpassed in all areas, both semesters. However, no students were reported as taking the examination for apprentice given by the Electricians', Carpenters', Tinsmiths', and Plumbers' Unions.

TABLE 6

Passing Rates for Program Students in Special Interest Courses

Course	FALL		SPRING		TOTAL
	Number of Students	Percent Passing	Number of Students	Percent Passing	Overall Passing Rate
Computer Programming	6	100.0	23	91.3	93.1
Typing/Steno/ Word Proc.	46	93.5	31	90.3	92.2
Eclectronics/ Arch. Draft./ Bldg. Trades*	24	87.5	12	83.3	90.8
TOTAL		92.1		89.4	90.8

*Includes woodshop, metalshop, drafting, and aircraft.

- The objective was surpassed in all areas, both semesters.

ATTENDANCE AND DROPOUT

-- As a result of participating in the program, students' attendance will be equal to or greater than that of mainstream students.

-- As a result of participating in the program, the percentage of students dropping out will be less than that of mainstream students in the school and in New York City.

Attendance

Project BITEC included in its non-instructional component a number of strategies designed to maximize student involvement in the program and to raise their level of aspiration. These strategies were linked to lower attrition and better attendance.

The bilingual guidance counselor and the bilingual paraprofessionals maintained direct contact with students and their families, and were familiar with their needs and concerns. Home visits by paraprofessionals often succeeded in preventing students from leaving school by offering both understanding and help to students and their families when they confronted problems. In some instances, dropping out was prevented by helping students find summer or part-time jobs, thereby enabling them to meet pressing financial needs without interrupting their schooling.

According to the project director, only a small number of program students cut classes. To discourage students from staying out of school, the new school principal prohibited students from loitering on the sidewalk outside school. This regulation, enforced with the cooperation of nearby shop owners, was expected to get the small number of truants back into class.

Other strategies to raise attendance and lower dropout rates worked indirectly, by raising the students' levels of aspirations, increasing

their achievement orientation and their pride in their ethnic heritage, and by promoting inter-ethnic understanding. One example was the International Food Festival Day which was held during the spring semester. This celebration, attended by students, parents, staff members, and teachers, featured dishes and cultural performances representing the native countries of all the program students. Public figures and professionals who shared the students' ethnic backgrounds were invited to participate. According to the project director, the opportunity for students to meet with role models from their own backgrounds was important in increasing their desire to achieve.

A club that enabled project participants to interact socially and to learn about each other's native culture was an important factor in promoting inter-ethnic understanding. To promote Italo-Latin American solidarity, an Argentinian-born teacher of Italian ancestry was made the club's president.

Statistical significance between program and school attendance was determined through the application of a z-test for the significance of a proportion.* This procedure tests whether the difference between one proportion (the program's attendance) and a standard proportion (the school's attendance) is grater than what can be expected by chance variation.

The attendance rate for program students was 85.9 percent, 10.3 percentage points above the schoolwide attendance rate (75.6). The z-test

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*Bruning, J.L. and Kintz, B.L.; Computational Handbook of Statistics; Scott, Foresman and Company, 1968.

results ($z=4.57$) indicate that the difference in attendance rates is statistically significant ($p<.05$). The program objective was thus met.

Dropout

Fifty-nine students left the program during the academic year. Of these, 39 were reported as dropouts. The dropout rate for program students was 10.2 percent. The most recent dropout rate available for mainstream and New York City Schools' students was from the 1984-85 academic year: 9.9 percent and 9.4 percent, respectively. Thus, the objective was not met.

CURRICULUM DEVELOPMENT

-- As a result of the Developmental and Implementation phases, as well as the program offered in the third year, BITEC will have evaluated the curricula and materials, made the desirable modifications and prepared them for dissemination to educational institutions with similar needs.

Project BITEC proposed to develop curriculum guides for the target population in each of the following areas: industrial arts, secretarial studies, and computer technology. The curriculum specialists have successfully achieved this objective. In all cases the curricula that were developed parallel the mainstream ones.

A booklet published during the year under review contains all these materials and can be obtained from the school upon request. A notice concerning the availability of these materials was sent to other high schools, such as Sheepshead Bay and Prospect Heights. According to project staff, copies were requested by the Ithaca School District Dissemination Center and by the National Clearing House for Bilingual Education.

STAFF PARTICIPATION AND TRAINING

-- As a result of participating in the program, the staff will receive in-service training through workshops given by the teacher trainer and will improve their pedagogical skills as well as acquire a better understanding of cultures, languages, and needs of the target group students and their families.

-- As a result of participating in the program, the staff will be required to attend a minimum of one bilingual conference per year.

The project coordinator and Title VII staff members attended monthly meetings and workshops as part of the ongoing process of improving the education of LEP students. Workshops dealt with the cultural and linguistic aspects of the educational process. In addition, the project coordinator held daily discussions with bilingual teachers and other staff members on pedagogical strategies and educational issues.

According to the information provided by the project director, all staff members attended more than one bilingual conference during the year, thereby meeting the program's objective for this area. Some of these conferences were held by the National Association of Bilingual Education (NABE), State Association of Bilingual Education (SABE), and Association of Teachers of Italian, Spanish, and Portuguese (ATISP).

PARENTAL INVOLVEMENT

-- As a result of the program, the percentage of parents participating in school activities will be equal to or greater than the percentage of parents of mainstream students.

The project director admitted that he did not have the data necessary for comparing the attendance rates of parents of mainstream and program students in a statistically efficient manner. This objective was being revised and will be modified in future proposals. However, the participation of the parents of program students, as assessed by attendance at a

"citizenship" class and at various evening E.S.L. classes, appeared considerably higher than in previous years.

During its first two years, the project had experienced difficulties in attracting parents. This was due partly to the fact that most parents had full-time jobs that left little time free to attend school activities. In addition, many reportedly felt intimidated by the school environment. These difficulties were addressed through direct contacts by the family paraprofessionals and by frequent mail and telephone contacts. A Telsol machine, capable of simultaneously dialing several numbers, was used frequently to extend invitations and to announce school activities.

IV. CONCLUSIONS

Project BITEC has successfully completed its final year of operation. In addition to E.S.L., native language arts, and bilingual content-area courses, the project offered vocational courses designed to facilitate students' successful entry into the job market.

Through a variety of instructional and non-instructional support services, Project BITEC facilitated the rapid acclimatization of young immigrants to the American language and culture.

Although the project was unable to fulfill all its bilingual personnel needs, it was able to provide the services that had been proposed in its objectives. Courses in E.S.L., native language arts, and most content areas were taught by licensed teachers. The project coordinator's enthusiastic and unflagging recruiting effort was, for the most part, responsible for this success. The program students made significant gains in English reading achievement, surpassed the proposed goals in native language arts courses, and achieved passing rates in spring math, science, social studies, and secretarial courses that were equal to or greater than those of mainstream students. Students also surpassed the proposed criterion level in such specialized courses as computer programming, typing, word processing, electronics, architectural drafting, and building trades. Finally, the attendance rate of program students was significantly higher than the schoolwide rate.

The program staff appeared to be competent and efficient, and to have empathy with the students' problems. This receptiveness seemed to be shared by most of the school's teachers and administrators, and the project had the active support of the school's new administration. From principal

to teachers, project directives and objectives were clearly stated and harmoniously implemented.

According to the principal, BITEC was often taken as a model by out-of-state school administrators who were initiating similar programs. He also said that the Superintendent of Brooklyn High Schools had directed personnel from other borough high schools to visit the program. BITEC also had recently been visited by a group of education students from North Carolina University.

Project BITEC provided valuable services to minority students from various language groups. Some of these services, however, came to an end with the close of the academic year. It is recommended that the school administration and the project staff attempt to minimize these negative effects by making efforts to obtain funds for maintaining these services as soon as possible.

V. APPENDICES

APPENDIX A

Bilingual Instruction in Subject Areas (Fall Semester)

Course Title & Level (Do not use school codes)	No. of Classes	No. Taught Out of License	No. of Classes with Para.	Total Register	Title VII Register	Percent of Eng. Used	Course Description	Curric.*	Texts/Materials in Use
Global History	4	0	2	128	128	70/30	As described by the New	C	Baord of Educatio
European History	1	0	1	43	43	70/30	York City Board of Educatior	C	approved material
American Government	1	0	1	20	20	70/30		C	and tests.
Economics	2	0	2	56	56	70/30		C	
American History I	1	0	0	17	17	70/30		C	
American History II	1	0	1	29	29	70/30		C	
General Science	2	0	0			70/30		C	
Biology I	3	0	2	101	101	70/30		C	

*Curriculum codes: C = NYC Curriculum T = Textbook Curriculum O = Other Curriculum
S = NYS Curriculum P = Program-developed Curriculum

Bilingual Instruction in Subject Areas (Spring Semester)

Course Title & Level (Do not use school codes)	No. of Classes	No. Taught Out of License	No. of Classes with Para.	Total Register	Title VII Register	Percent of Eng. Used	Course Description	Curric.*	Texts/Materials in Use
Earth Science	1	0	1	11	11	70/30	As described by the New York City Board of Education	C	Board of Education approved material.
General Science	2	0	2	62	62	70/30		C	
General Biology	4	0	4	107	107	70/30		C	
Calculus	1	0	1	17	17	70/30		C	
Computer Math	2	0	2	21	21	70/30		C	
Math Fundamentals I	1	0	1	18	18	70/30		C	
Math Fundamentals II	1	0	1	23	23	70/30		C	
Government	1	0	1	23	23	70/30		C	
Economics	1	0	1	27	27	70/30		C	
Global History II	4	0	2	124	124	70/30		C	
Global History III	1	0	1	23	23	70/30		C	
American History I	2	0	1	32	32	70/30		C	
American History II	2	0	1	43	43	70/30		C	

*Curriculum codes: C = NYC Curriculum T = Textbook Curriculum O = Other Curriculum
S = NYS Curriculum P = Program-developed Curriculum

Specialized Courses (Fall Semester)

Course Title (track &/or level)	No. of Classes	No. Taught Out of License	No. of Classes with Para.	Total Register	Title VII Register	Percent of Eng. Used	Course Description	Curric.*	Texts/Materials in Use
Computer I	1	0	1	17	17	70/30	As described by the New	C	Board of Educati
Computer II	1	0	1	14	14	70/30	York City Board of	C	approved text
Architectural Drafting	1	0	1	16	16	70/30	Education	C	and material.
Keyboarding	2	0	2	40	40	70/30		C	
Typing II	1	0	0	7	7	70/30		C	

Specialized Courses (Spring Semester)

Course Title (track &/or level)	No. of Classes	No. Taught Out of License	No. of Classes with Para.	Total Register	Title VII Register	Percent of Eng. Used	Course Description	Curric.*	Texts/Materials in Use
Architectural Drafting	1	0	1	6	6	70/30	As described by the	C	Board of
Keyboarding	1	0	1	34	34	70/30	New York City Board of	C	Education appr
Computer Science	1	0	1	16	16	70/30	Education	C	text and materials.

*Curriculum codes: C = NYC Curriculum T = Textbook Curriculum O = Other Curriculum
S = NYS Curriculum P = Program-developed Curriculum